

Application No. 09/835,106  
Docket No. 02-12, ACT 126/127

Art Unit 2839  
Examiner Michael C. Zarroli

### **REMARKS**

Claims 1-3, 5, 6, 8-43 are pending in the application, of which claims 1-3, 5, 6, 8-27, and 34 are allowed. Claims 28, 31, 35, 37, 39, 42, and 43 stand rejected. Claims 29, 30, 32, 33, 36, 38, 40, and 41 are objected to.

### **CLAIM OBJECTIONS**

Claim 29 stands objected to do to the misspelling of the word "An". Applicant has amended claim 29 above to effect the correct spelling of the word "An". Accordingly, Applicant understands the objection to be overcome.

### **REJECTIONS UNDER 35 U.S.C. 102**

Claims 28 and 31 stand rejected under 35 U.S.C. 102(b) as being anticipated by Shigematsu et al. (US 5185825). The Office Action states that "Shigematsu discloses an optical switch (title), comprising: a substrate (41) having at least one longitudinal groove and at least one transverse groove (unnumbered figures 3a & 3b); a first waveguide holding member (21) having at least one transverse groove (23); and a second waveguide holding member (22) having at least one longitudinal groove (34)." Applicant respectfully disagrees with the rejection, because Applicant does not believe that each of the elements recited in claim 28 is disclosed in Shigematsu.

For example, Applicant respectfully disagrees with the position that Shigematsu discloses "a first waveguide holding member (21) having at least one transverse groove (23); and a second waveguide holding member (22) having at least one longitudinal groove (34)." The "longitudinal groove" 34 and "transverse groove" 23 are illustrated in Fig. 2 (a) of Shigematsu as being parallel to one another and parallel to the longitudinal axis of the optical fibers 27c. Figs. 3a & 3b also clearly illustrates that the pin holes 23 are parallel to the optical axis of the optical fibers of the first and second ferrules 21, 22. It is simply not possible that two parallel "grooves" can be a longitudinal groove and a transverse groove. A transverse groove cannot be parallel to a longitudinal groove. Thus, the two parallel "grooves" 23, 34 are not a longitudinal and a transverse groove. For at least this reason, Shigematsu fails to disclose each and every element recited in independent claim 28.

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In addition, it is respectfully noted that Applicant cannot find the unnumbered “at least one longitudinal groove and at least one transverse groove” in the “substrate 41” of Shigematsu as alleged in the Office Action. Applicant respectfully requests clarification as to where these two features are disclosed.

For the above reasons, Applicant respectfully submits that Shigematsu fails to disclose each and every element recited in independent claim 28. Accordingly, Applicant respectfully requests that the rejection of claim 28, as well as claim 31 which depends therefrom, be withdrawn.

#### **REJECTIONS UNDER 35 U.S.C. 103(a)**

Claims 35, 37, 39, and 42-43 stand rejected under 35 U.S.C. 103 as being unpatentable over You et al (US 6160936). The Office Action states that “You discloses a first waveguide holding member (110) and a second waveguide holding member (120) disposed over a substrate (100), said first waveguide holding member being movable relative to said substrate; and at least one movement guiding member (fig. 1) disposed between said substrate and said first waveguide holding member to guide the motion of said first waveguide holding member relative to said second waveguide holding member, said movement guiding member comprising at least one depression (124) and at least one positioning member (102) disposed in said depression. You does not disclose that the structure is intended for use as an optical switch.... At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to employ the optical waveguide aligner/connector of You et al as an optical switch.” (Citations Omitted.) Applicant respectfully disagrees for least the reason that You **teaches away** from a movable waveguide holding member.

Specifically, You is directed to “an apparatus for easily combining optical fibers with an optical waveguide by a passive and alignment method using a guide rail in order to save time and money when attaching the optical fibers to an optical waveguide device chip.” (Column 1, lines 43-47.) “The optical fiber array portion of the optical waveguide device chip, combined with each other on the guide rail of the guide rail portion for alignment, are

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fixed together by an optical glue or by welding.” (Emphasis Added. Column 2, lines 46-49.  
See also column 6 lines 22-26.)

Interconnecting and gluing in place abutting optical fibers/ waveguides is the antithesis of switching. Since You is not directed to optical switching but rather the opposite – interconnecting fibers/waveguides to hold them in fixed relation – there can be no motivation to modify You to turn You into an optical switch. Rather, **You teaches away** from such a modification, since You is concerned with coupling fibers and waveguides in fixed relation. Indeed, modifying You to permit motion of the fiber array 110 and waveguide device chip 120 relative to one another would create a connector more susceptible to creating coupling losses between the fibers and waveguides. Not only is there no motivation provided in You to make such a modification, Applicant respectfully submits that such a modification would seem to render the You device less suited for its intended purpose. That is, a moveable fiber array would render the device of You less suited for its intended purpose of aligning and interconnecting fibers and waveguides and therefore would be an inferior structure to the structure actually disclosed by You for solving the “complicated alignment process of performing and alignment with respect to an alignment axis having six degrees of freedom with submicron precision” problem recognized by You. (Abstract.)

Hence, not only is there no motivation to make that proposed modification, You teaches away from an optical switch having “a first waveguide holding member .... being movable relative to said substrate; and at least one movement guiding member ... to guide the motion of said first waveguide holding member relative to said second waveguide holding member,” as recited in Applicant’s claim 35. Accordingly, Applicant respectfully requests that the rejection of claim 35, as well as claims 37, 39, and 42-43 which depend therefrom, be withdrawn.

#### **ALLOWABLE SUBJECT MATTER**

Applicant notes with appreciation the indication that claims 29, 30, 32, 33, 36, 38, 40, and 41 would be allowable if rewritten in independent form. However, for the reasons presented above, independent claims 28 and 35 are believed to be allowable. Therefore,

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claims 29, 30, 32, 33, 36, 38, 40, and 41 which depend respectively therefrom are believed to be allowable in their present form.

In view of the foregoing amendments and remarks, it is believed that the claims in this application are now in condition for allowance. Early and favorable reconsideration is respectfully requested. The Examiner is invited to telephone the undersigned in the event that a telephone interview will advance prosecution of this application.

Respectfully submitted,



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